CLAIMS

1. A measurement system comprising:

a first log amp; and

a second log amp.

2. A measurement system according to claim 1 further comprising a differencing circuit coupled to the first and second log amps.

3. A measurement system according to claim 2 wherein:

the first log amp has a first logarithmic output coupled a first input to the differencing circuit; and

the second log amp has a second logarithmic output coupled to a second input to the differencing circuit.

4. A measurement system according to claim 3 wherein the differencing circuit comprises a summing node.

5. A measurement system according to claim 2 further comprising an output interface circuit coupled to the differencing circuit.

6. A measurement system according to claim 2 further comprising a phase detector core coupled to the first and second log amps.

7. A measurement system according to claim 6 wherein:

the first log amp has a first limiting output coupled to a first input of the phase detector core; and

the second log amp has a second limiting output coupled to a second input of the phase detector core.

8. A measurement system according to claim 7 wherein the detector core comprises a multiplier.

9. A measurement system according to claim 6 further comprising an output interface circuit coupled to the phase detector core.

10. A measurement system according to claim 1 wherein the first and second log amps are co-integrated on a substrate.

11. A measurement system according to claim 10 wherein the first and second log amps are arranged symmetrically about a center line.

12. A measurement system circuit according to claim 10 wherein the substrate is mounted in a package.

13. A measurement system according to claim 12 further comprising:

a first parasitic network coupled to the first log amp; and

a second parasitic network coupled to the second log amp;

wherein the first and second parasitic networks have similar frequency responses.

14. A measurement system according to claim 2 further comprising a third log amp coupled to the differencing circuit.

15. A measurement system according to claim 2 further comprising one or more additional log amps coupled to the differencing circuit.

16. A measurement system comprising:

a first log amp having a first limiting output;

a second log amp having a second limiting output; and

a phase detector core coupled to the first and second log amps to receive the first and second limiting outputs.

17. A measurement system according to claim 16 wherein the phase detector core comprises a multiplier.

18. A measurement system according to claim 16 wherein the first and second log amps are co-integrated on a substrate.

19. An integrated circuit comprising two or more log amps. (4,131,254, col 50-15)

Cont - a2

20. An integrated circuit according to claim 19 further comprising a differencing circuit coupled to the two or more log amps. (5534854, col 3, 23, 25)

21. An integrated circuit according to claim 19 further comprising a phase detector core coupled to the two or more log amps. (5508,610, 7, 44-53)

22. A method comprising:

logarithmically amplifying a first input signal, thereby generating a first output signal;

logarithmically amplifying a second input signal, thereby generating a second output signal; and

differentially processing the first and second output signals.

23. A method according to claim 22 wherein:

the first and second output signals are logarithmic output signals; and

differentially processing the first and second output signals comprises differencing the first and second output signals.

24. A method according to claim 22 wherein:

the first and second output signals are limiting output signals; and

differentially processing the first and second output signals comprises multiplying the first and second output signals.

25. A method according to claim 22 further comprising:
utilizing a signal to be examined as the first input signal; and
utilizing a reference signal as the second input signal.

26. A method according to claim 25 wherein the reference signal has the same waveform as the signal to be examined.

27. A method according to claim 22 further comprising:
utilizing a modulated signal for the first input signal; and
utilizing a modulation signal for the second input signal.